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ABSTRACT

Western Illinois University's College of Education and Human Services has redesigned its teacher education program for pre-service elementary teachers. The redesigned program provides more classroom observations and onsite field experiences in the schools at earlier stages in student teachers' education and offers methods classes with integrated coursework (which are team taught by subject matter experts) that allows for the application of integrated, thematic units in actual classroom settings. A longitudinal study compared students in this redesigned program to students in a traditional teacher education program. Data collected on three redesign cohorts and their control groups over 4 years included: demographics, high school percentile rate, ACT scores, cumulative grade point average in college, percent receiving semester honors in college, scores on the Teacher Belief Inventory, preliminary certification pretest scores, scores on a written philosophy of education essay, assessment of their unit planning skills, performance on the State Teacher Certification Test, and job attainment. Overall, students in the redesign groups did at least as well as, or in several cases did better than, students in the traditional teacher education program. (SM)

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ACCOUNTABILITY IN TEACHER EDUCATION: FOURTH-YEAR RESULTS FROM A LONGITUDINAL STUDY EVALUATING A REDESIGNED TEACHER EDUCATION PROGRAM

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Accountability in Teacher Education: Fourth-Year Results from a Longitudinal Study Evaluating a Redesigned Teacher Education

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Statement of the problem

Western Illinois University's College of Education & Human Services has redesigned its Teacher Education Program for undergraduates working toward a degree in Elementary Education. The redesigned education program provides more classroom observations and *on-site field experiences in the schools at earlier stages* in their education as well as providing methods classes with *integrated coursework* team-taught by subject matter experts that allows for the application of integrated, thematic units in actual classroom settings.

In their freshmen year, students observe a multi-age primary grade classroom through a two-way interactive audio/video system. Each student must complete over ten hours of focused observations. They also have opportunities to interact with and ask questions of the classroom teacher at regularly scheduled times. These "virtual observations" allow students early experiences with classroom observation with the additional benefit that the classroom observed is a charter school in a diverse urban setting. This solves some problems that we ran into initially. The local classrooms in our rural areas were being overrun by large numbers of preservice students, since there were no other schools in this rural area within commuting distance for our college students. Allowing preservice teachers to observe classrooms from a closed circuit viewing room resulted in less disturbance to the teacher and students in the classroom, as well as less time lost to transportation for the college students. It also provided access to observations of an urban school site and diversity among students that was unavailable in our rural area.

Beginning with their sophomore year, the new program places education students in classrooms for long-term observations and volunteer assistance, eventually leading up to a full range of teaching opportunities and responsibilities. Students will spend over 300 hours in the field prior to their student teaching experience. In addition, their coursework is presented in an integrated fashion, combining the separate subject matters of reading, language arts, math, science, and social studies into methods blocks that allow students to apply their lessons in real classrooms.

Four cohorts of students have participated in the redesigned education program. However, the fourth cohort has been excluded from the study, as *all* students in the program are now currently enrolled in the redesigned program. For each of the prior cohort groups, a control group of students enrolled in the traditional teacher education program was selected in order to be able to make comparisons between the performance of students enrolled in the two programs. This has allowed us a unique opportunity to collect data comparing the performance of students in the redesigned educational program with those completing the previous, more

traditional educational program. In order to closely monitor any changes in student outcomes, a careful assessment of student performance is taking place, covering such diverse areas as performance on coursework, certification tests, portfolios, philosophy of education statements, beliefs about teaching, and thematic unit planning. These varied types of measures allowed us to make comparisons between the cohort students enrolled in the redesigned educational program and comparable students participating in the traditional educational program, which provided only minimal field experiences until the junior year and which consisted of separate courses taught by subject-matter specialists. The rest of this paper will report our results to date.

Literature Review:
The teacher education program review team did a thorough search of the literature on teacher preparation programs, and gathered a huge file of readings. However, none of the other programs fit our particular needs. Various components were gathered from a wide variety of sources, including literature from American Association of Colleges for Teacher Education (AACTE) publications, the American Association for Higher Education (AAHE), and from sources such as the National Center for Restructuring, Education, Schools, and Teaching (NCREST). Some of the main literature influencing the creation of this new program and its related evaluation includes the usage of standards-based methods of evaluation. The standards being used include those specified by the National Council for Accreditation of Teacher Education (NCATE), Illinois Professional Teaching standards (which are INTASC-based), national subject matter standards (reading, math, science, social studies, etc.) and the Illinois Learning Standards for each subject area. In addition to reviewing other known redesign programs for teacher education, the staff went on several site visits to other programs that had a reputation for following "best practices." Interestingly enough, on some of the site visits, it was very useful to notice problem areas to avoid in our own program redesign, as well as to note practices to emulate. This provided us with some very important information relevant to our own redesign plans.

Contribution of this work to the knowledge base:
Both formal presentations and informal contacts regarding our assessment process have indicated a high level of interest by other teacher educators in this topic. The major outcome of value to the education field resulting from this evaluation project is the collection of hard data verifying teacher competencies and expertise in authentic classroom situations, which are aligned with state and national standards.

This presentation will detail the longitudinal assessment of students entering these two types of teacher education programs as they continue on their way to become full-fledged teachers. The traditional teacher education program at our institution is very strong and has consistently received positive reviews from the many school administrators in our own and several nearby states who later hire our graduates. However, both the Department of Curriculum and Instruction and the College of Education & Human Services are being proactive in trying to

make an outstanding teacher education program even better. To this end, this longitudinal evaluation is being carried out to:

> **1)** see if presenting earlier, sustained, incremental field experiences to students results in teaching expertise and performance that is as good as, if not better than, those of students in the previous traditional program, and
>
> **2)** examine whether providing integrated coursework in a combined "methods block" paired with integrated field experiences,(rather than providing separate courses in such areas as reading, language arts, math, science, and social studies), results in students whose performance is at least as good as, if not better than, that of traditional students when planning effective integrated lessons.

This report will include data collected from the three redesign cohorts and their control groups over the past four years. A majority of the first two redesign cohorts and their control groups have graduated. The students comprising Redesign Cohort 3 and Control Group 3 are scheduled to graduate during calendar year 2002. This report will include the results of the first few years of data gathered from the initial three pilot group cohorts of students and their randomly drawn control group counterparts who began their teacher education program at the same time.

Redesign Cohorts & Control Groups for the Redesigned Teacher Education Program

Redesign Cohort Selection

The redesign cohorts entered the University as freshmen majoring in Elementary Education, and typically began their redesigned program in the second semester of their freshmen year. The teacher education redesign cohorts were selected on a volunteer basis. Originally there were four redesign cohorts and four control groups. The fourth redesign cohorts and control groups were dropped from the study as all students are currently enrolled in the redesigned program format. A majority of the first and second redesign cohorts and their control groups have graduated. The third cohort is currently enrolled and is scheduled to graduate calendar year 2002.

There were 20 students originally enrolled fall 1997 in the First Redesign Cohort, with 19 of these students graduating calendar year 2000. This cohort began their redesigned program later than subsequent redesign cohorts, as first semester sophomores.

The Second Redesign Cohort initially consisted of 26 students enrolled in spring 1998, with 15 of these students graduating calendar year 2001. These students enrolled in the program as second semester freshmen.

The Third Redesign Cohort consisted of 34 students enrolled spring 1999, with 20 of these students currently enrolled as seniors. These students also enrolled in the program as second semester freshmen.

Control Group Selection

Control group members were selected for comparison purposes with the redesign cohorts. The control group members included freshmen that entered the University as Elementary Education majors at the same time as their respective redesign cohorts. These control group members were enrolled in the traditional teacher education program. The control cohorts were adjusted to represent the same proportion of specially admitted students as were represented in the redesign cohort groups. Students majoring in the Early Childhood option of the Elementary Education program were excluded from the control cohorts. Control group members were selected to reflect the academic characteristics of the redesign groups as closely as possible.

Attrition

There were 41 students originally enrolled in Control Group 1. During calendar year 2000, 18 of these students graduated. Control Group 2 originally totaled 58 students, with 15 graduating calendar year 2001 and 5 currently enrolled. Control Group 3 originally enrolled 68 students, and 38 are currently enrolled. As can be seen in these numbers, the control groups have experienced higher attrition rates compared to the students in the Redesign Cohort groups. This may be an

indication that the students in the Redesigned Educational Program were more satisfied with the education they received, compared to those control group students still enrolled in the traditional teacher education program. Alternatively, it may merely indicate that those students who were sure they wanted to become teachers volunteered for the Redesigned Educational Program, while those less committed to their choice of teaching as a career, stayed in the traditional teacher education program.

Demographic and Academic Comparisons

The demographic variables revealed that 91% of the three redesign cohorts and 92% of the three control groups were female. Both the redesign and control cohorts were predominantly Caucasian (98% for the redesign cohorts and 92% for the control cohorts). Total Curriculum & Instruction Elementary Education majors enrolled at the University Fall 2001 showed that 10.5 percent were male and 92% were Caucasian. This shows that the Redesign Cohort groups and their control groups were very similar to the overall makeup of the entire group of Elementary Education majors.

Table 1: Academic Variables of Redesign and Control Cohorts 1, 2 and 3

Cohort	Average High School Percentile	Average Cumulative GPA	Cumulative ACT Score	Percent Receiving Semester Honors***	Initial number in Group	Number Graduated in the Elementary Education program (as of 12-2001)	
Redesign Cohort 1	69.8	3.549	22.0	60.0	20	19	(95%)
Control 1	70.1	3.157	22.4	20.0	41	18	(44%)
Redesign Cohort 2	67.5	3.202	21.4	56.0	26	15	(57.7%)
Control 2	59.7	3.131	21.3	10.0	58	15*	(25.8%)
Redesign Cohort 3	70.5	3.366	22.3	47.6	34	20**	
Control 3	64.3	3.203	20.1	42.1	68	38**	
Total	66.3	2.862	21.7	14.8	-	-	

*5 additional students currently enrolled

**Currently enrolled

***Semester GPA of 3.6 or higher

(Scores and entering information gathered before becoming involved in the program)

1) **Demographic information gathered from the students' applications.**

As noted in the section reviewing demographic information, the students who applied for the Redesign Cohort groups were volunteers; thus, they were not randomly assigned to groups. However, we chose control groups to be as similar as possible to each of the Redesign Cohort Groups. Each group was composed of mostly females (91% Redesign groups vs. 92% Control groups). Both groups were also predominantly Caucasian, although the control groups had slightly more minority representation (98% Caucasian in the Redesign Cohorts vs. 92% in the Control groups).

2) **High School Percentile Rank**

As seen in Table 1, Redesign Cohort 1 and Control Group 1 had nearly identical average High School Percentile Ranks (69.8 and 70.1 respectively). Redesign Cohorts 2 and 3 had slightly higher High School Percentile Ranks than did the comparable students in the Control groups, as seen in Table 1. On the whole, both groups had similar high school percentile ranks, with Cohorts 2 & 3 having somewhat higher scores than their controls.

3) **ACT scores**

The ACT scores were nearly identical for both Redesign 1 and Control 1, and Redesign 2 and Control 2, as seen in Table 1. There were slightly higher scores for the Redesign 3 students (22.3) compared to their Control Group 3 students (20.1). Thus, the scores were very similar between the groups, with the exception of a small advantage in the scores for Redesign Cohort 3.

(Scores obtained during the program evaluation, while in college.)

4) **Cumulative GPA in college**.

The college GPA's of students in the Redesign and Control groups were higher in Redesign 1 compared to Control 1 (3.5 vs.3.1), but were much closer for Redesign 2 and Control 2 (3.2 vs. 3.1) and Redesign 3 and Control 3 (3.36 vs. 3.2). (See Table 1)

5) **Percent Receiving Semester Honors in College**

In order to receive semester honors, a student must have a 3.6 or higher GPA (on a 4.0 scale). In examining Table 1, it is quite striking to see how lopsided the scores were between those students who were enrolled in the newly redesigned educational program and those still enrolled in the traditional program. Despite choosing students who had similar ACT scores in high school and had similar high school GPAs, there are huge differences in the number of students who received "honors" each semester, with the Cohort 1 and Cohort 2 students performing three to five times better than their controls. The one exception concerns the students in Redesign Cohort 3 and Control groups 3. While the students in the cohort group still outperformed the students in the control group, there is a much smaller difference, giving the redesign groups only a slight advantage.

Summary of Table 1 information

Table 1 compares the Redesign and Control cohorts on several academic variables. These variables reveal several differences between the cohort and control groups. A higher proportion of the students in the Redesign cohorts received semester honors (having a grade point average of 3.6 or higher) than did the students in the Control groups. The cumulative college grade point average (GPA) is also higher for all three Redesign Cohort groups compared to their respective Control Group members. In addition, as of December 2001, the number of students graduating from the Elementary Education program was substantially higher for the first two Redesign Cohorts compared to the first two Control Groups.

Other Measures Gathered to Evaluate these Students

Teacher Belief Inventory

A Teacher Belief Inventory was administered to the redesign and control groups from 1998 through 2001. The inventory was given to the first redesign cohort and their control group during their sophomore year and again during their last semester before graduation. The inventory consists of 57 items and a four point scale asking the students to "strongly disagree" (1) through "strongly agree" (4) with items relating to beliefs about teaching.

Ten items that were related to the goals of the University's teacher education program were chosen out of a total of 57 questions for closer analyses. As stated earlier, one goal of the redesigned program is to integrate coursework into a combined methods block, rather than provide separate courses in reading, language arts, math, etc.

As can be seen in the left portion of Table 2, when comparing mean scores for all three redesign cohort students with those of their three control groups, on the initial administration of the belief inventory given when they were either freshmen or sophomores and had not yet been through the program, we found that there were no significant differences between the students on all but one of the items. Thus, the groups began their educational program, with fairly similar beliefs regarding issues related to teaching.

The one item which showed a significant difference in the mean scores at this point in time related to the statement, "It would be important to me to divide the school day into clearly designated times for different subject areas". On this item, the mean score of the redesign cohorts was higher than that of the control cohorts (3.342 vs. 3.078). This is one item on which the preferred answer would be to have a *lower* score. Thus, the redesign groups were starting out biased *against* the importance of integrating different subject matters during instruction. From the goals of the redesign program, we would expect the students to strongly disagree (value=1) or disagree (value=2) with this statement, after going through our new program. This is one item that was, therefore, of special interest when we evaluated the students at the end of the program.

In the right half of Table 2, there are comparison scores on the Teacher Belief Inventory of the students in Cohort 1 who went through the redesigned program, gathered at the beginning of the program and at the end of the program. These scores allow us to see how the students' scores changed over time. In examining teacher belief inventory scores of the Redesign Cohort 1 at their sophomore and senior levels, we found a significant change in the mean scores from the statement, "I would teach the knowledge of different subject areas separately, because important knowledge is overlooked when subjects are integrated". We would expect the students to strongly disagree (value=1) or disagree (value=2) with this statement, particularly as they move through the program. Table 2 shows that the mean score at the sophomore level was 2.176, while the mean score at the senior level had dropped significantly, 1.352 ($p < .05$). This shows that the students in Cohort 1 were disagreeing significantly more with this statement as they received more training in the program, as we hoped they would.

Cohort 1 students also showed significant changes in mean scores from sophomore to senior level with the statement, "It would be important to me to divide the school day into clearly designated times for different subject areas." The mean score for this statement at the sophomore level was 3.411, while the mean score at the senior level had dropped significantly to 2.470 ($p < .05$).

The decrease in mean scores over time for these two statements is what we would expect from students who are being taught the value of integrated coursework. This is especially gratifying to see, since this was the only item on which there were significant differences between the redesign and control groups on the initial administration of the Teacher Belief Inventory. The redesign students had been biased *against* the use of integrated instruction at the start of their teacher education program, but had significantly changed their views concerning this idea by the end of their program, indicating that some significant learning had taken place on this issue.

The scores in Table 2 include all of the scores from the initial administration of the Teacher Belief Inventory, given when the students began the program, (which was usually when they were freshmen, although Redesign Cohort 1 took this at the start of their Sophomore year, since they did not begin the program until then). The students in the control groups lag behind their redesign cohorts by an extra semester or more, due to the general education requirements. The students in the redesigned educational program received waivers permitting them to enter the teacher education program with fewer general studies requirements, allowing them to complete the program in just four years, rather than the current four-and-a-half years required for the traditional teacher education program. Because not all of the control group members have yet graduated from Control Group 2, and none of the Redesign Cohort 3 or Control Group 3 members have completed the final Teacher Belief Inventory, we do not have scores available pre and post for groups other than Cohort 1.

Table 2. Selected Teacher Belief Inventory Items for Redesign and Control Cohorts 1, 2 and 3

	Redesign Cohorts 1, 2 & 3 n=77	Control Cohorts 1, 2 & 3 n=115	T Value	Prob. (p<.05)		Redesign Cohort #1 1st inventory (April 1998) n=17	Redesign Cohort #1 2nd inventory (March 2000) n=17	T Value	Prob. (p<.05)
Questions where we expect agreement Score of 3 "Agree" or 4 "Strongly Agree"	Mean	Mean				Mean	Mean		
1. Parents would have the right to visit my classroom at any time if they gave me prior notice.	3.584	3.739	1.52	.130		3.941	3.709	1.53	.137
2. Learners should have some choice in the selection of classroom assignments.	2.519	2.695	1.61	.110		2.882	2.882	.00	1.000
3. One of the most important tasks I would face as a teacher is developing individuals into a good working group.	3.250	3.121	1.19	.236		3.411	3.352	.31	.761
4. Because people learn a great deal from their mistakes, I would allow learners to learn by trial and error.	3.223	3.321	1.19	.234		3.176	2.9412	1.15	.259
5. I would serve more as a group facilitator than as a transmitter of information.	2.894	2.921	.24	.811		2.941	2.764	.78	.442
Questions where we expect disagreement Score of 1 "Strongly disagree" or 2 "Disagree"									
1. As a teacher I would rely heavily on the textbook and prepackaged materials, rather than trying to write and design my own.	2.090	1.973	1.10	.273		2.058	1.764	1.71	.096
2. In the elementary grades, instruction in the three R's should take up most of the day. Other subject areas (e.g., science, social studies) should be given less emphasis in the curriculum.	1.881	1.800	.70	.483		1.764	1.823	.23	.818
3. I would emphasize teaching the three R's more than the skills of problem solving.	2.065	1.938	1.26	.209		2.176	1.764	1.85	.074
4. It would be important to me to divide the school day into clearly designated times for different subject areas.	3.342	3.078	2.09	.038		3.411	2.470	3.28	.002
5. I would teach the knowledge of different subject areas separately, because important knowledge is overlooked when subjects are integrated.	2.381	2.522	1.05	.295		2.176	1.352	3.36	.002

SOURCE: This inventory was adapted from an instrument developed by Zither and Dabchick at the University of Wisconsin-Madison from Posner, G. (1996). Field Experience. White Plains, NY: Legman Publishers.

Preliminary Certification Pretest Scores

The Preliminary Certification Pretest was given to all students at the start of their educational program. It consisted of a subset of questions derived from the State Certification Test for Teachers.

As seen in Table 3, comparisons of the students' performance on this pretest showed no significant differences between the scores of the students in either the redesigned program or their control groups at the start of their program. Both groups of students tended to score around 54% on this pretest , although scores ranged from 33% to 77% correct. This indicates that there were *not* significant differences in their knowledge concerning teacher education at the start of their program.

Teacher Certification Tests

We are continuing to gather official Teaching Certification Test scores from the state concerning the performance of the 19 elementary education majors who entered the pilot program in the Fall of 1997 and graduated (Cohort 1) and their counterpart (Control Group 1), consisting of 18 freshman who entered the program at the same time as those in the pilot program and have now graduated. This was the first group to graduate from the redesigned program since its inception. The second group we are tracking consists of 15 students who have graduated who entered the redesigned teacher education program in the Spring of 1998 (Cohort 2), along with their counterpart (Control Group 2), which consists of 20 elementary education majors who began their education program at the same time as the Cohort 2 group. Fifteen of these have graduated and five are currently enrolled. The third group of students we are tracking (Cohort 3) consists of 20 students currently enrolled who entered the redesigned teacher education program in the Spring of 1999, along with their counterpart (Control Group 3), consisting of 38 elementary education majors currently enrolled who began their education program at the same time as the Cohort 3 group.

We will be tracking the progress on the Teaching Certification Test of both the cohort and control groups of students as they continue in their educational studies and enter the profession.

As seen in Table 4, the Teacher Certification Test scores showed that both groups of students were having good pass rates. Nearly one-hundred percent of both groups who have completed the test have passed it. There was one individual in Control Group 1 who did not pass the test the first time, but then retook it and passed. Every other group since then has had 100% pass rates, so far.

The test requires a score of 70% or better to pass. The average score of both the students in the Redesign Cohorts and their Control Groups was around 82% with some slight variations. What looks like a low score for Control Group 3 is only based on 2 people, and thus is not a very reliable measure to represent this group. Some individuals have not taken their certification test yet, so we are still gathering data on this measure.

(Godt, Benelli, & Kline, 2002) Western Illinois University, Macomb, IL

Table 3: TEACHER CERTIFICATION AND PRE-CERTIFICATION TEST SCORES

TEACHER PRE-CERTIFICATION TEST -Group Average Scores

	Average	
Cohort 1 (N=4)	X=59.03 %	(Taken as Sophomores;They have now graduated.)
Control 1 (N=4)	X=62.5 %	(Taken as Sophomores;They have now graduated.)
Cohort 2 (N=17)	X=53.76 %	(Taken as Freshmen; They have now graduated.)
Control 2 (N=15)	X=53.33 %	" " ;They are now Student Teaching.)
Cohort 3 (N=28)	X=55.36 %	(Taken as Freshmen; They are now Seniors)
Control 3 (N=54)	X=53.00 %	" " " " " "
Cohort 4 (N=33)	X=52.5 %	(Taken as Freshmen; They are now Juniors)
Control 4 (N=53)	X=55.13 %	" " " " " "

Table 4: TEACHER CERTIFICATION TEST SCORES

(Average Group Score on the State Teacher Certification Test)

Cohort 1 (N=14)	X=82.21% (70%=pass)	(Taken as Seniors July 99, Oct 99, or Jan 2000)
Control 1 (N=12)	X=81.75% (70%=pass)	(Taken as Seniors April, July, or October 2000)
Cohort 2 (N=12)	X=82.08% (70%=pass)	(Taken as Seniors July & Oct 2000, or April & July 2001)
Control 2 (N=11)	X=81.73% (70%=pass)	(Taken as Seniors July 2000, April & July 2001)
Cohort 3 (N=9)	X=81.78% (70%=pass)	(Taken as Seniors April & July 2001)
Control 3 (N=2)	X=76.00% (70%=pass)	(Taken as Seniors April 2001)

*(*Note: There has been a 100% pass rate for all groups except Control Group 1, which had one person fail, who later retook the exam and passed)*

The State of Illinois Certification Test average score ranged from 80% to 82%, depending of the date of testing. (A Passing score was 70 or above.) So far, all students in the Cohort 1 group have passed the Teacher Certification Test. So far, one student in Control Group 1 failed the test and had to retake it in order to become a certified teacher. To date, all students who have taken the Teacher Certification Test from either Cohort 2 or Cohort 3 or Control Group 2 or 3 have passed the exam. Although the students in Control Group 3 had lower scores, this score was only based on data from two students, since most students have not taken the test yet. This average score is expected to rise as more students complete the exam.

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Philosophy of Education Scores:

It is interesting to compare the scores of the first group of students we have had who were able to complete the same measure at two different points in time. Our Redesign Cohort 1 students and Control Group 1 students took the Philosophy of Education measure at both the midpoint (during their junior year) and also at the end of their teacher education program (during their student teaching experience at the end of their senior year). Table 5b shows the Philosophy of Education total scores for both the Cohort 1 and Control Group 1 students as juniors (which showed *highly significant* differences) and then the Cohort 1 and Control Group 1 total scores for the same groups of students when they were seniors (which showed *no* significant difference).

It is notable that the students involved in the redesigned program (Cohort 1) learned important information related to the Philosophy of Education approximately a year earlier than did those students who were enrolled in the traditional teacher education program (Control Group 1). It appears that the students in the redesigned program significantly increased the quantity of their knowledge between their freshman and junior year, showing a great leap forward early on in their educational program. This may be a result of the students in this group having had many more experiences in the field at an early stage. In the meantime, their colleagues in the traditional program did not learn as much new information related to their Philosophy of Education until their senior year. They showed a more gradual pattern of learning that was fairly evenly spaced out among all the years of their education. The Cohort 1 students in the redesigned program increased their knowledge early on and then had a smaller increase between their Junior and Senior years, as they had already mastered most of this information at an earlier stage.

Unlike the scores for their junior year, there were no significant differences found between the Cohort 1 students and their Controls on their total scores during their senior year. Thus, it appears that the control group students caught up in the quantity of ideas that they could list when describing six components of their Philosophy of Education. However, there were trends showing that the means of the students in the redesigned program were still higher, though not significantly so, than those of the control group in the area of *quantity of ideas*. In the area of *significance of ideas*, both groups were much closer together, with no overall significant differences found. The only subtest showing a significant difference showed that the control group seniors mentioned more significant ideas than did those students in the redesigned cohort 1 group in the area of "purposes of education."

Table 5a: PHILOSOPHY of EDUCATION SCORES (gathered 1999-2000) (2000-2001)

	(Freshmen)		(Juniors)		(Seniors)	
Category:	Cohort 3	Control 3	Cohort 2	Control 2	Cohort 1	Control 1
Purposes of Education	(N=20)	(N=16)	(N=16)	(N=8)	(N=18)	(N=8)
Quantity of ideas mentioned	X=1.45	X=1.0	X=2.4	X=2.5	***X=2.61***	***X=3.62****
Significance of ideas mentioned	X=1.75	X=1.31	X=2.3	X=2.1	***X=2.36***	***X=3.06****
Children's **Needs**						
Quantity of ideas mentioned	X=1.8	X=1.44	X=2.7	X=2.1	X=3.06	X=2.75
Significance of ideas mentioned	X=1.88	X=1.81	X=2.5	X=2.0	X=2.50	X=2.62
Learning **Environment**						
Quantity of ideas mentioned	X=2.03	X=1.94	X=2.5	X=2.1	***X=3.97***	***X=2.87****
Significance of ideas mentioned	X=1.83	X=2.0	X=2.4	X=1.7	X=2.89	X=2.75
Curriculum						
Quantity of ideas mentioned	X=1.58	X=1.47	X=2.12	X=1.8	X=3.31	X=3.62
Significance of ideas mentioned	X=1.95	X=1.84	X=2.4	X=1.9	X=2.75	X=2.94
Effective **Teachers**						
Quantity of ideas mentioned	X=2.48	X=2.38	X=3.81	X=2.8	X=4.19	X=4.19
Significance of ideas mentioned	X=2.23	X=2.16	X=2.5	X=2.1	X=2.97	X=2.94
Families/Communities						
Quantity of ideas mentioned	X=2.43	X=2.22	X=2.44	X=2.4	X=3.61	X=2.56 *(.07)*
Significance of ideas mentioned	X=2.15	X=1.94	X=2.31	X=2.1	X=2.89	X=2.88
TOTALS:						
Quantity mean scores:	X=1.96	X=1.74	X=2.6	X=2.28	X=3.46	X=3.27

Two-tailed t-tests comparing:

(Freshman) Cohort 3 vs Control 3= ($p < 0.11$ NS);

(Juniors) Cohort 2 vs Control 2= ($p < 0.18$ NS);

(Seniors) Cohort 1 vs. Control 1= ($p < .57$ NS)

Significance *of ideas* means :	X=1.96	X=1.85	X=2.35	X=2.01	X=2.73	X=2.86

Two-tailed t-tests comparing:

(Freshmen) Cohort 3 vs Control 3= ($p < 0.16$ NS);

(Juniors) Cohort 2 vs Control 2= ($p < 0.06$ NS)

(Seniors) Cohort 1 vs Control 1 = ($p < .47$ NS)

(* = p<.05;
**** = p<.01)**

In Table 5a, when comparing the overall scores of freshmen to those of Juniors and comparing both of these to scores of Seniors, it is clear that all of the students are improving their knowledge of both the number of different ideas related to education and the significance of those ideas for application in classrooms over their time in the program. It also appears that the Cohort groups are certainly performing as well as, and in several cases, better than the control groups on this measure. However, only a few of the comparisons are significantly different (although there is a trend to have cohort students show slightly higher scores in the majority of comparisons that failed to show a significant difference).

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Table 5b: PHILOSOPHY of EDUCATION SCORES (gathered 1999-2000 & 2000-2001)

	(Freshmen)		(Juniors)		(Seniors)	
Category:	Cohort 3	Control 3	Cohort 1	Control 1	Cohort 1	Control 1
Purposes of Education	(N=20)	(N=16)	(N=17)	(N=11)	(N=18)	(N=8)
Quantity of ideas mentioned	X=1.45	X=1.0	X=3.00	X=2.59	***X=2.61***	***X=3.62****
Significance of ideas mentioned	X=1.75	X=1.31	X=2.09	X=2.27	***X=2.36***	***X=3.06****
Children's **Needs**						
Quantity of ideas mentioned	X=1.8	X=1.44	***X=3.18***	***X=1.91****	X=3.06	X=2.75
Significance of ideas mentioned	X=1.88	X=1.81	X=2.38	X=2.18	X=2.50	X=2.63
Learning **Environment**						
Quantity of ideas mentioned	X=2.03	X=1.94	X=3.38	X=2.68	***X=3.97***	***X=2.87****
Significance of ideas mentioned	X=1.83	X=2.0	X=2.53	X=2.36	X=2.89	X=2.75
Curriculum						
Quantity of ideas mentioned	X=1.58	X=1.47	X=2.68	X=2.00	X=3.31	X=3.62
Significance of ideas mentioned	X=1.95	X=1.84	X=2.21	X=2.09	X=2.75	X=2.94
Effective **Teachers**						
Quantity of ideas mentioned	X=2.48	X=2.38	***X=3.82***	***X=2.86****	X=4.19	X=4.19
Significance of ideas mentioned	X=2.23	X=2.16	X=2.53	X=2.46	X=2.97	X=2.94
Families/Communities						
Quantity of ideas mentioned	X=2.43	X=2.22	**X=3.79**	**X=2.59****	X=3.61	X=2.56 (.07)
Significance of ideas mentioned	X=2.15	X=1.94	X=2.59	X=2.32	X=2.89	X=2.88
TOTALS:						
Quantity mean scores:	X=1.96	X=1.74	***X=3.31***	***X=2.44****	X=3.46	X=3.27

Two-tailed t-tests comparing:

Cohort 3 vs. Control 3= (p<.11 NS);

Cohort 1 (Jr) vs. Control 1 (Jr)= (p<.005**);

Cohort 1 (Sr) vs. Control 1 (Sr)= (P<.57 NS)

Significance of ideas means :	X=1.96	X=1.85	X=2.39	X=2.28	X=2.73	X=2.86

Two-tailed t-tests comparing:

Cohort 3 vs Control 3= (p<.16 NS);

Cohort 1 (Jr) vs Control 1 (Jr)= (p<.61 NS);

Cohort 1 (Sr) vs. Control 1 (Sr)=(p<.47 NS)

(* = p<.05; ** = p<.01)

When comparing the Cohort 1 (Juniors) who were involved in the redesigned teacher education program vs. the Control 3 (Freshmen) scores, the students at the Junior level did highly significantly better than the freshman for both number and significance of the ideas listed in their Philosophy statements, indicating that the students did make highly significant improvements in both the quantity and quality of their ideas mentioned in their Philosophy of Education statements:

Junior Cohort group vs. Freshman Control group

Quantity: p<0.0002** and ***Significance*** of ideas: p<0.0003**

Note: The Cohort 1 and Control Group 1 ***Juniors*** *are the same individuals who are represented the following year in the Cohort 1 and Control Group 1* ***Seniors****.*

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Unit Planning Task

As a midpoint assessment, students in Redesign Cohorts 2 & 3 who were completing their second semester of integrated methods courses and students who were in the traditional program and who were at a comparable point in their education (enrolled in Rdg 366, or Rdg 384) completed a thematic unit planning task.

They were each given a description of a classroom, including specifics about diverse characteristics of the students. Their task was to develop a planning outline for a four week integrated unit on the environment. The directions specified that the outline was intended to communicate the decision-making processes that go into planning for instruction. Prompts were provided to guide their work. The outlines were then evaluated using a rubric based on the Illinois Teaching Standards.

As seen in Table 6, there were some interesting differences between the groups. The students were scored using a rubric based on the State of Illinois Teaching Standards and contained 10 items which could be scored on a Likert scale ranging from 1 = Does not meet expectations for students at this point in the program; 3 = Meets expectations for students at this point in the program; typical work of junior level students; to 5 = Exceeds expectations for students at this point in the program. Comparisons were made between Redesign Cohort 2 students and their counterparts who were *not* in the redesigned program but were instead enrolled in the Rdg 366 Reading Methods course. Comparisons were also made between students in Redesign Cohort 3 and their counterparts who were *not* in the redesigned program, but were instead enrolled in the Rdg 384 Reading Methods course. All lesson plans were double scored by different faculty for enhanced reliability of scores.

On the first page of Table 6, there were no significant differences between either Cohort 2 and Rdg 366 students or between Cohort 3 and Rdg 384 students on items 1) Curriculum, 2)Human Development and Learning, or 3) Diversity.

On page 2 of Table 6, there were significant differences in favor of the students in the Redesigned Educational Program for Cohort 2 students in item 4a) "Planning for Instruction--establishing expectations for student learning in all relevant content areas." There were also significant differences in favor of the students in the Redesigned Educational Program for Cohort 3 students in items 4c) "Planning for Instruction--Specifies that the plan will be interdisciplinary and identifies multiple content areas." and 5a) "Learning Environment--Addresses the learning environment as a means to support the classroom learning community, student motivation and personal responsibility, and collaborative learning opportunities."

On page 3 of Table 6, there were significant differences in favor of the students in the Redesigned Educational Program for Cohort 3 students in item 5b) "Learning Environment--Addresses the need to organize, allocate, and manage time, materials, physical space to provide

active and equitable engagement of students in productive tasks."

It is impressive to see that in every case where there was a significant difference between the groups, it was always in favor of those students who were enrolled in the newly redesigned educational program. In addition, the scores of the students in the redesigned program were usually higher than those not in the program, even if the difference did not attain statistical significance, showing definite trends favoring the ability of the new program to best prepare students for their future unit planning tasks.

It is also interesting to note the significant finding in favor of the students in the redesign group on item 4c for Cohort 3, which measures the students' use of *integration* of multiple content areas, since this is one of the areas that on the Teacher Belief Inventory students in Cohort 1 had been biased against, but which was encouraged in the redesigned educational program. It shows that the students, by the midpoint of their teacher education program, placed a higher value on the importance of subject matter integration than they had when they first entered the program.

Overall, this Unit Planning Measure indicates that the students in the Redesign Cohort Groups are doing as well as, and in most cases, better than their counterparts who were not enrolled in the new redesigned teacher education program.

Table 6: Redesign Mid-Point Assessment: Scenario Results-Spring 2000 & 2001

5 = exceeds expectations for students at this point in program
3 = meets expectations for students at this point in program; typical work of junior level students
1 = does not meet expectation for students at this point in program

1. Curriculum

5	3	1
Indicates the need to incorporate central concepts and tools of inquiry for relevant content areas and to tie curricular planning state/national standards.	Indicates the need to incorporate central concepts and tools of inquiry for relevant content areas or to tie curricular planning state/national standards.	No reference to central concepts, tools of inquiry, or state/national standards.

	Mean	Standard Deviation	TTest
Cohort 2	2.37	.45	
RDG 366	2.45	.79	p<.644
Cohort 3	2.99	1.02	
RDG 384	2.15	1.03	p<.721

2. Human Development and Learning

5	3	1
Specifies that goals/objectives/ activities should reflect both the typical level of development of students at specified grade level AND that differences in developmental level are expected.	Specifies that goals/ objectives/activities should reflect the typical level of development of students at specified grade level.	No reference to consideration of the typical level of development of students at specified grade level.

	Mean	Standard Deviation	TTest
Cohort 2	2.97	.90	
RDG 366	2.82	1.014	p<.582
Cohort 3	2.21	.90	
RDG 384	2.13	1.16	p<.763

3. Diversity

5	3	1
Indicates that a range of instructional strategies are needed, consistent with description of students in the scenario.	Indicates the need for more than one instructional strategy, but not directly related to the description of students in the scenario.	No reference to the need for varied instructional strategies based on the description of students in the scenario.

	Mean	Standard Deviation	TTest
Cohort 2	3.69	.87	
RDG 366	3.27	1.13	p<.132
Cohort 3	3.39	.97	
RDG 384	3.06	1.16	p<.175

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Table 6 (cont'd):

4a. Planning for Instruction

5	3	1
The need to establish expectations for student learning in all relevant content areas stated.	The need to establish expectations for student learning stated.	No mention of the establishment of expectations for student learning.

	Mean	Standard Deviation	TTest
Cohort 2	3.59	.76	
RDG 366	3.01	.85	p<.014*
Cohort 3	2.89	.46	
RDG 384	2.67	1.15	p<.179

4b. Planning for Instruction

5	3	1
Specifies that learning experiences and materials need to be appropriate for the relevant disciplines and curriculum goals (including IEP's), relevant to the students' lives and interests, and based on students' prior knowledge.	Specifies that learning experiences and materials need to be appropriate to for the relevant discipline and curriculum goals, or relevant to the students' lives and interests, or based on students' prior knowledge.	Appropriateness of learning experiences and materials not addressed.

	Mean	Standard Deviation	TTest
Cohort 2	2.81	.81	
RDG 366	3.13	.86	p<.191
Cohort 3	2.55	.72	
RDG 384	2.35	1.75	p<.182

4c. Planning for Instruction

5	3	1
Specifies that the plan will be interdisciplinary and identifies multiple content areas.	Identifies more than one content area and specifies that content areas will be integrated.	Addresses only one content area; no reference to integration.

	Mean	Standard Deviation	TTest
Cohort 2	3.03	1.60	
RDG 366	3.09	1.05	p<.891
Cohort 3	2.76	.82	
RDG 384	2.07	.89	p<.007*

5a. Learning Environment

5	3	1
Addresses the learning environment as a means to support the classroom learning community, student motivation and personal responsibility, and collaborative learning opportunities.	Addresses the learning environment as an element of planning but few specific aspects identified.	No reference to the learning environment in planning.

	Mean	Standard Deviation	TTest
Cohort 2	3.19	.70	
RDG 366	3.11	.83	p<.717
Cohort 3	3.24	.56	
RDG 384	2.70	1.01	p<.003*

Table 6 (cont'd):

5b. Learning Environment

5	3	1
Addresses the need to organize, allocate, and manage time, materials, and physical space to provide active and equitable engagement of students in productive tasks.	Addresses the need to organize, allocate, and manage time, materials, and physical space.	No reference to relevance of time, materials, and physical space.

	Mean	Standard Deviation	TTest
Cohort 2	2.75	.86	
RDG 366	2.56	.86	p<.447
Cohort 3	2.21	.54	
RDG 384	1.76	.79	p<.005*

6. Instructional Delivery

5	3	1
Considers a wide range of instructional technologies to promote meaningful learning.	Considers instructional technologies to promote meaningful learning.	No consideration of instructional technologies to promote learning.

	Mean	Standard Deviation	TTest
Cohort 2	3.16	.40	
RDG 366	3.09	.69	p<.917
Cohort 3	3.03	.66	
RDG 384	2.94	.61	p<.659

7. Assessment

5	3	1
Identifies assessment as a necessary element of planning and instruction, including student self-assessment.	Identifies assessment as a necessary element of planning and instruction.	No reference to assessment.

	Mean	Standard Deviation	TTest
Cohort 2	3.09	.27	
RDG 366	2.93	.52	p<.110
Cohort 3	2.87	.52	
RDG 384	2.73	.76	p<.392

* p< .05

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CONCLUSIONS

As we redesign teacher education programs based on national accreditation standards, state teaching standards, and student learning standards, accountability demands that we document the effectiveness of our redesign efforts. Therefore, we want to share our research findings with others doing similar changes in teacher education programs.

Measures used to investigate our preservice teachers' abilities at different points during the teacher education program consisted of the following:
(Scores and entering information gathered before becoming involved in the program)
1) **Demographic information** gathered from the students' applications.

As noted in the section reviewing demographic information, the students who applied for the Redesign Cohort groups were volunteers; thus, they were not randomly assigned to groups. However, we chose control groups to be as similar as possible to each of the Redesign Cohort Groups. Each group was composed of mostly females (91% Redesign groups vs. 92% Control groups). Both groups were also predominantly Caucasian, although the control groups had slightly more minority representation (98% Caucasian in the Redesign Cohorts vs. 92% in the Control groups).

2) **High school percentile rank**

Redesign Cohort 1 and Control Group 1 had nearly identical average High School Percentile Ranks (69.8 and 70.1 respectively). Redesign Cohorts 2 and 3 had slightly higher High School Percentile Ranks than did the comparable students in the Control groups, as seen in Table 1. On the whole, both groups had similar high school percentile ranks, with Cohorts 2 & 3 having somewhat higher scores than their controls..

3) **ACT scores**

The ACT scores were nearly identical for both Redesign 1 and Control 1, and Redesign 2 and Control 2, as seen in Table 1. There were slightly higher scores for the Redesign 3 students (22.3) compared to their Control Group 3 students (20.1). Thus, the scores were very similar between the groups, with the exception of a small advantage in the scores for Redesign Cohort 3.

(Scores obtained during the project, while in college.)
4) **Cumulative GPA in college**.

The college GPA's of students in the Redesign and Control groups were higher in Redesign 1 compared to Control 1 (3.5 vs.3.1), but were much closer for Redesign 2 and Control 2 (3.2 vs. 3.1) and Redesign 3 and Control 3 (3.36 vs. 3.2). (See Table 1)

5) **Percent Receiving Semester Honors in College**

In order to receive semester honors, a student must have a 3.6 or higher GPA (on a 4.0 scale). It is quite striking to see how lopsided the scores were between those students who

were enrolled in the newly redesigned educational program and those still enrolled in the traditional program. Despite choosing students who had similar ACT scores in high school and had similar high school GPAs, there are huge differences in the number of students who received "honors" each semester, with the Cohort 1 and Cohort 2 students performing three to five times better than their controls. The one exception concerns the students in Redesign Cohort 3 and Control groups 3. While the students in the cohort group still outperformed the students in the control group, there is a much smaller difference, giving the redesign groups only a slight advantage.

In addition, we also assessed preservice teachers' performance on the following additional measures:

6) Scores on a **Teacher Belief Inventory**(pre & post);

As seen in Table 2, the students in both the redesign and control groups began the program with similar beliefs, although the students in the redesign group began with a bias against using integrated instruction. By the end of the program, the students in the redesigned educational program had changed their views and had significantly more positive beliefs concerning integrated instruction than they had at the beginning. None of the other items on the Teacher Belief Survey relevant to our teacher education program showed any significant differences between the students' beliefs.

7) **Preliminary certification pretest** scores related to the State Certification Testing System;

As seen in Table 3, comparisons of the students' performance on a preliminary certification pretest given to students in the teacher education program showed no significant differences between the scores of the students in the redesigned program or their control groups. Both groups of students tended to score around 54% on this pretest. This indicates that there were *not* significant differences in their knowledge concerning teacher education at the start of their program. It also demonstrates that they did increase their knowledge level about teaching as measured by their scores on a pretest form of the certification test at the entrance to the program and their final Teacher Certification Scores upon graduation from the program. Their average scores increased from around 54% correct on the pretest to around 82% correct on the official test, indicating a growth in their knowledge over their college years.

8) Scores on a written **Philosophy of Education** essay, given at three points in time--at the start of the program, at the midpoint, and at the end of student teaching

As seen in Tables 5a and 5b, when comparing the Cohort 1 (Juniors) who were involved in the redesigned teacher education program vs. the Control 3 (Freshmen) scores, the students at the Junior level did highly significantly better than the freshman for both number and significance of the ideas listed in their Philosophy statements, indicating that the students did make highly significant improvements in both the quantity and quality of their ideas

mentioned in their Philosophy of Education statements. In addition, when comparing the overall scores of freshmen to those of juniors and comparing both of these to scores of seniors, it is clear that all of the students are improving their knowledge of both the *number* of different ideas related to education and the *significance* of those ideas for application in classrooms over their time in the program. The Cohort groups performed as well as (and, in several cases, better than) the control groups on this measure.

9) An assessment of their **unit planning skills** in creating a written outline of key planning components for a four-week **integrated learning experience** addressing the diverse needs of learners.

It is impressive to see that in every case where there was a significant difference between the groups, it was always in favor of those students who were enrolled in the newly redesigned educational program. In addition, the scores of the students in the redesigned program were usually higher than those not in the program, even if the difference did not attain statistical significance, showing definite trends favoring the ability of the new program to best prepare students for their future lesson-planning tasks. Overall, this Lesson Planning Measure indicates that the students in the Redesign Cohort Groups are doing as well as, and in most cases, better than, their counterparts who were not enrolled in the new redesigned teacher education program.

(Information obtained at the end of the program, at or just after graduation)

10) **Performance on the Teacher Certification Test**

(Their official scores given on the State Certification Testing System that determine whether they may become a certified teacher or not);

As seen in Table 4, the teacher certification test scores showed that both groups of students were having good pass rates. The test requires a score of 70% or better to pass. The average score of both the students in the Redesign Cohorts and their Control Groups was around 82% with some slight variations. What looks like a low score for the Control Group 3 is only based on 2 people, and thus is not a very reliable measure to represent this group. There was one individual in Control Group 1 who did not pass the test the first time, but then retook it and passed. Every other group since then has had 100% pass rates, so far. Some individuals have not taken their certification test yet, so we are still gathering data on this measure.

11) **Job Attainment**

Many of the graduates who were enrolled in Redesign Cohorts 1 and 2 as well as those in Control Group 1 (many Control Group 2 members have not yet graduated) have notified the University of their current employment status. Of the 19 graduates from the Redesign 1 Cohort, 11 out of the 11 reporting information indicated that they are elementary education teachers in Illinois. Of the 15 graduates from the Redesign 2 Cohort, 10 out of the 10 reporting information indicated they are employed as elementary education teachers, 8 in Illinois and the remainder in

other states. The graduates from Control Group 1, however, reported a much more varied employment picture. Of the fifteen graduates, eleven reported back employment information to the University. Although 10 of the 11 are employed in the field of education, only 6 are teachers. The rest have other positions: 2 are teacher aides, 1 is a Specialist/Truancy Officer, 1 works as a Tutor, and 1 currently works as a brokerage representative. They are all employed in Illinois. Thus, while 100% of those reporting back from the Redesign Cohort Groups were employed as teachers, barely half (54%) of the Control Group students found employment as teachers. This, again, indicates somewhat better employment outcomes for the students who participated in the redesigned educational program compared to those participating in the traditional program.

Summary

Our initial focus during the first years of data collection was more on formative assessment than summative evaluation. However, after four years of data collection, the findings presented previously in this paper indicate that the students in the redesign groups have done at least as well as, and in several cases, have done better than, our students in the traditional teacher education program. Based on the strength of this data showing how well our students were doing in the redesigned education program, the decision was made during the past year to enroll *all* new students into the redesigned teacher education program and to discontinue the traditional program used in the past.